

REMARKS

Claims 1, 2 and 4-18 are currently pending. Support for the amendment to claim 1 may be found in the specification as originally filed, for example, in original claim 3 and paragraphs [0026], [0040], [0066] to [0067] and [0079] to [0080].

The specification has been amended to indicate the scientific name for the compounds identified by their tradenames M-631N and M-605N. See MPEP 608.01(v). See also the attached product brochure from Mitsui Takeda Chemicals, Inc.

I. Formal Matters

The Examiner did not list WO 2003/062,873 and JP 2003-287,622 on the Notice of References cited. The Examiner is requested to complete the record by listing WO 2003/062,873 and JP 2003-287,622 on a PTO Form 892

II. The Rejection under 35 U.S.C. 102(b)/(e) or 103(a)

Claims 1-2 and 4-18 are rejected under 35 U.S.C. 102(b)/(e) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as allegedly obvious over “WO 2003/062,873, JP 2003-287,622 or equivalent US 2005/0,122,586.”

Claim 1 has been amended to include the subject matter of claim 3. Therefore, this rejection is moot.

III. The Rejection under 35 U.S.C. 103(a)

Claims 1-18 are rejected under 35 U.S.C. 103(a) allegedly as obvious over “WO 2003/062,873, JP 2003-287,622 or equivalent US 2005/0,122,586” in view of JP 09-080,204.

First of all, WO 2003/062,873, JP 2003-287,622 and US 2005/0,122,586 do not all belong to the same “family.” WO 2003/062,874 is a related document to JP 2003-287,622 and US 2005/0,122,586. Regardless, during a brief telephone conference with Examiner Wu, Examiner Wu stated to reference the U.S. patent document in responding to the Office Action. Therefore, Adachi (US 2005/0,122,586) is discussed below.

Applicants respectfully submit that the present invention is not rendered obvious over the disclosures of Adachi in view of Suzuki (JP 09-080,204) and request that the Examiner reconsider and withdraw this rejection in view of the following remarks.

In Adachi, there is no disclosure nor suggestion of hexamethylenediisocyanate or 1,3-bis(isocyanatomethyl)cyclohexane and Adachi does not teach or disclose any compound with a glass transition temperature T_g of 100°C or less in a state of being cured.

The present invention comprises an optical compensation layer formed of a liquid crystal monomer and a chiral dopant. Adachi also relates to an optical compensation layer formed of a liquid crystal monomer and a chiral dopant. Whereas, Suzuki relates to an antireflection sheet including a transparent substrate film, an adhesive layer and a low-refractive-index layer (see claim 1 of the attached partial translation of Suzuki). In Suzuki, it is described that the adhesive

layer used for the antireflection sheet is a compound having an isocyanate group (see claims 1 and 6 of Suzuki). However, the transparent substrate film and the low-refractive-index layer of Suzuki are totally distinct from the optical compensation layer formed of the liquid crystal monomer and the chiral dopant as referred in Adachi. Thus, since Suzuki and Adachi have different technical fields, there is no suggestion for a combination of the adhesive layer used in Suzuki and the optical compensation layer of Adachi, where the adhesive layer used in Suzuki is used for the optical compensation layer of Adachi. That is, Suzuki is not within the field of the Adachi's or Applicants' endeavor. And further is not reasonably pertinent to the particular problem with which the inventor was involved. The combination of elements from non-analogous sources, in a manner that reconstructs the Applicant's invention only with the benefit of hindsight, is insufficient to establish a prima facie case of obviousness.

While, as set forth above, it is believed the Examiner has not established a prima facie case of obviousness, to advance the prosecution of the case, Applicants note that the specification of the present application provides evidence showing the unexpectedly improved properties of the presently claimed optical compensation plate over the materials of the references of the rejection.

In Adachi, an isocyanate-based adhesive is described as an anti-cracking layer. However, in the case where the anti-cracking layer is the isocyanate-based adhesive with the glass transition temperature T_g of more than 100°C in the state of being cured, after carrying out a heat treatment test, a moistening treatment test and a low-temperature treatment test, display

irregularity is observed within the plane of the optical compensation plate. This is shown in Comparative example 1 (using a mixture of 1,3-bis(isocyanatomethyl)cyclohexane and a copolymer A as the adhesive, $T_g = 120^\circ\text{C}$) in the specification of the present application. To the contrary, as shown in Example 1 (using hexamethylenediisocyanate as the adhesive, $T_g = 50^\circ\text{C}$) and Example 2 (using 1,3-bis(isocyanatomethyl)cyclohexane as the adhesive, $T_g = 90^\circ\text{C}$) display irregularity is unexpectedly prevented within the plane of the optical compensation plate of the present invention. Thus, if using hexamethylenediisocyanate with T_g of 100°C or less in the state of being cured or 1,3-bis(isocyanatomethyl)cyclohexane as the moisture-curing isocyanate compound, in the case of mounting it as a polarizing plate with an optical compensation layer to a liquid crystal panel, an effect of preventing the display irregularity, which cannot be expected from Adachi, can be obtained.

For the above reasons, it is respectfully submitted that the subject matter of claims 1, 2 and 4-18 is neither taught by nor made obvious from the disclosures of Adachi and Suzuki and it is requested that the rejection under 35 U.S.C. §103(a) be reconsidered and withdrawn.

IV. Conclusion

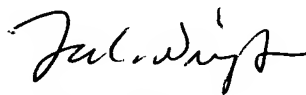
In view of the above, Applicants respectfully submit that their claimed invention is allowable and ask that the rejections under 35 U.S.C. §102 and the rejection under 35 U.S.C. §103 be reconsidered and withdrawn. Applicants respectfully submit that this case is in condition for allowance and allowance is respectfully solicited.

Amendment Under 37 C.F.R. §1.111
Application No. 10/542,272
Attorney Docket No. 052530

If any points remain at issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the local exchange number listed below.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,
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Attachment: Partial English translation of Suzuki (JP9(1997)-80204A)
Product brochure from Mitsui Takeda Chemicals, Inc. (2 pages)



Partial Translation of
JP 9(1997)-80204 A

Publication Date : March 28, 1997

5 Application No. : 7(1995)-262135

Filing Date : September 14, 1995

Applicant : Dai Nippon Printing Co., Ltd

1-1-1, Ichigayakaga-cho, Shinjuku-ku, Tokyo

10 Title of the Invention : ANTIREFLECTION SHEET

Translation of claims 1 and 6

15 【Claim 1】

An antireflection sheet, wherein a low-refractive-index layer with a refractive index that is lower than a refractive index of an adhesive layer described below is laminated to a transparent base film via the adhesive layer with a glass transition temperature of 20°C or more.

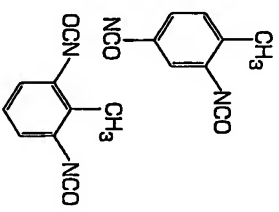
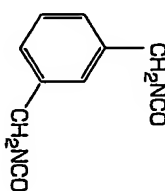
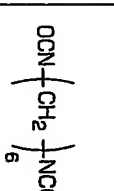
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【Claim 6】

The antireflection sheet according to any one of claims 1, 2, 3, 4 and 5, wherein the adhesive layer contains a compound having an isocyanate group by 10% or more.

25

isocyanate monomer

	TDI (2,4-トリスチロール80)	XDI (4,4'-ジフェニルメタンジイソシアネート500)	HEXDI (4,4'-ヘキサメチレンジイソシアネート600)	HD (4,4'-ヘキサメチレンジイソシアネート700)	NBD (2,2'-ニブチレンジイソシアネート)	MITUXDI (4,4'-メチルチンキジイソシアネート)	MITMI (4,4'-メチルチンキジイソシアネート)
80%2,4-及び 20%2,6-トリリン ジイソシアネート		キシリン ジイソシアネート			ノルボルネン ジイソシアネート	テトラメチルキシリン ジイソシアネート	4,4'-メチルチンキ- α,α'-ジメチルベンジル ジイソシアネート
外観	無色透明液体	無色透明液体	無色透明液体	無色透明液体	無色透明液体	無色透明液体	無色透明液体
色相(APHA)	15以下	100以下	20以下	30以下	10 (代表)	100以下	100以下
純度(%)	99.7以上	99.0以上	99.5以上	99.5以上	99.8 (代表)	98.0以上	95.0以上
加水分解性塩素(%)		0.1以下	0.1以下	0.03以下	0.01 (代表)	-	-
酸度(%)	0.002-0.004	0.01以下	0.01以下			0.01以下	0.01以下
NCO(%)	48.2	44.7	43.3	49.9	40.8	34.4	20.9

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polyurethane resin of Mitsui Takeda

moisture-curing polyisocyanate

品名	性状 (代表値)				溶剤	性能						Type	特徴	用途	消滅法		
	NCO (%)	NV (%)	塩 化数 (G)	比重 (0.25/4)		指触乾燥 (分)	硬化乾燥 (時間)	コシ目 (x/100)	27℃での曲 (mm)	折曲 (mm)	衝撃 (inch * 6 * cm)					鉛筆硬度	
タネート MT-オクタ-(*)																	
*M54-80A	4.1	80	ZZ1	<3	トルエン/キシレン/ 酢酸エチル/メトアセ	180	24					6B	TDI	速硬化性	天板、合板等	4-1	
*M21-40X	2.5	40	CD	<3	キシレン	75	3					B	TDI	標準タイプ	皮革、木材、床材	4-2	
*M83-42CX	3.5	42	CD	<3	キシレン/PMA	60	3					B	TDI	M21-40Xの速硬化・速硬化タイプ品	皮革、木材、床材	4-2	
*M83-42SP	3.5	42	CD	<3	1.00	90	3					B	TDI	M83-42CXのキシレンフリー品	皮革、木材、床材	4-2	
M-407	3.1	50	MN(330)	<2	1.01	トルエン/PMA	10	2	100	27℃で	27℃で	1/2 * 500 * 50	HB	TDI	速硬化		4-1
M-417	3.4	42	FG(150)	<1	1.00	キシレン/PMA	6	1.8	100	8	2	1/2 * 1000 * 50	F	TDI			4-2
*M37-33J	4.3	33	A3	<3	トルエン/キシレン/ 酢酸エチル/メトアセ	30	2					F	TDI	速硬化	FRP、パイパー	4-1	
*M37-50A	6.5	50	FG	<3	トルエン/キシレン/ 酢酸エチル/メトアセ	30	2					F	TDI	速硬化	シーラー、床材	4-1	
*M80-50CX	5.2	50	AB	<3	1.03	キシレン/PMA	60	6				H	TDI	高硬度標準タイプ	一般木工、床材	4-2	
*M80-65CX	5.3	64	VW	<3		キシレン/PMA	60	6				F	TDI	M80-50CXの耐汚染品	一般木工、肉付ラック	4-2	
*M86-50CX	4.3	50	AB	<3	1.03	キシレン/PMA	30	2				F	TDI	M80-50CXの速硬化タイプ	一般木工、床材	4-2	
M-408	4.2	50	FG(150)	<1	1.02	トルエン/PMA	10	0.5	100	8	2	1/2 * 500 * 30	F-H	TDI	速硬化		4-1
M-402	5.4	50	A<50	<2	1.01	キシレン/酢酸エチル /PMA	18	5	100	8	2	1/2 * 500 * 20	H	TDI	一般用		4-1
M-402P	2.7	25	A3<50	<2	0.93	トルエン/酢酸エチル /キシレン/PMA	6	3.5	100	8	2	1/2 * 500 * 20	H	TDI	一般用		4-1
M-403	8.5	75	MN	<3	1.01	トルエン	40	4.5	100	8	2	1/2 * 1000 * 50	H	C-MDI	一般用		4-1
M-450	4.8	50	AB(60)	<1	1.01	キシレン/酢酸エチル /PMA	14	5	100	8	2	1/4 * 500 * 40	H	TDI	速硬化・速硬化性・肉付ラック		4-1
M-405	15	75	OP(400)	<3	1.13	トルエン	10	5	10	0.17mm	107mm	1/2 * 300 * 10 mm	H-2H	C-MDI	速硬化・速硬化性		4-1
*M95-50A	6	50	MN	<3		トルエン/キシレン/ 酢酸エチル/メトアセ	30	1				2H	TDI	高硬度タイプ	シーラー、床材	4-1	
*M75-50E	6	50	FG	<3		トルエン/キシレン/ 酢酸エチル	15	1				3H	TDI	高硬度タイプ	シーラー、床材、高硬度タイプ	4-1	
*M75-50SS	6	50	FG	<3		酢酸エチル/酢酸エチル	15	1				3H	TDI	M75-50Eのトルエンフリー品	シーラー、床材、高硬度タイプ	4-1	
*NM89-50G	6	50	AB	<3		キシレン/酢酸エチル /PMA	80	2.5	100	8	2	1/2 * 1000 * 50	B	HDI	耐水性・耐食	皮革、木材、シーラー	4-1
M-631N	4.5	50	AB(60)	<1	0.97	酢酸エチル/MEK	20%	4.0	100	8	2	1/2 * 1000 * 50	HB	HDI	耐水性・耐食	皮革、木材	4-1
M-605N	2.5	40	MN(370)	<1	0.95	キシレン/酢酸エチル	6	3.2	100	8	2	1/2 * 1000 * 50	HB-F	H6XDI	耐水性	皮革、木材	4-1

性能評価：25℃×60%RH、雰囲気下にて測定 (評価方法は2ページ目欄を参照ください)